

## Should *CMAJ* publish a French edition?

John W. Osterman, MD, CM, ScD, FRCPC

**Résumé :** Le *JAMC* joue un rôle vital dans l'atteinte des objectifs de l'AMC, qui doit notamment agir comme porte-parole de la profession médicale au Canada. Or, une revue du volume 146 du *JAMC* révèle que ce porte-parole s'exprime presque uniquement en anglais. Dans ce volume, 81 % des articles ont paru en anglais seulement, 11 % ont paru en anglais accompagnés d'un résumé en français, 8 % ont paru en versions anglaise et française complètes et 0,5 % ont paru en français seulement. Une comparaison avec cinq autres revues canadiennes destinées aux professionnels de la santé, publiées au cours de la même période (janvier à juin 1992) révèle que le *JAMC* est celui qui contient le moins d'articles en français et que tous les autres ont publié un pourcentage plus élevé de résumés en français d'articles en anglais. Les services en langue française se sont améliorés considérablement à l'AMC depuis que celle-ci a adopté sa politique sur les langues officielles en 1989. Il reste que la rédaction du *JAMC* compte du personnel anglophone et bilingue, mais aucun francophone. Par ailleurs, les auteurs francophones écrivent le plus souvent en anglais. Afin de contribuer à faire mieux connaître l'AMC au Québec et à dissiper le mythe selon lequel les soins de santé sont une question uniquement provinciale, l'auteur estime que le *JAMC* devrait publier une édition en français. En attendant, dit-il, le journal actuel devrait recruter des auteurs et des rédacteurs francophones, traduire les documents clés, solliciter et produire des documents en français et encourager la présentation d'articles scientifiques en français.

Editors of *CMAJ* recently reviewed volume 146 of the journal (January to June 1992) for French content. This review showed that, although 20% of the authors considered themselves bilingual and 10% of the articles came from Quebec, fewer than 2% were written in French. Is this an appropriate level of French content? they asked. It depends, they answered, "on the composition of the readership, the number of French-language articles received by the journal and what is perceived as an appropriate amount of French by francophone readers."<sup>1</sup> Quite true, I believe. But, more important, it depends on what sort of organization the CMA (rather than *CMAJ*) truly wishes to be, how it wishes to be perceived and whom it wishes to represent.

In January 1991 the CMA published a strategic plan that provided some answers to these questions. Among other objectives this plan called for the CMA to promote its capacity and ability to represent all segments of organized medicine in Canada, to recruit and retain 90% of eligible Canadian physicians as members within 5 years, to strengthen its position as the national medical consensus-builder by increasing the number and effectiveness of its communication activities and products and to be accepted as the "voice of Canadian medicine" by professional health care organizations, the public, divisions, affiliates, nonaffiliated specialty societies, members and nonmembers.<sup>2</sup>

As the flagship publication of the CMA and Canada's leading peer-reviewed scientific general medical journal, *CMAJ* plays a vital role that will help the association achieve its objectives or hinder it from doing so. *CMAJ* is CMA's most frequently published and probably best-read publication. It publishes peer-reviewed orig-

*Dr. Osterman is director of the Community Health Department, Lakeshore General Hospital, Pointe Claire, Que., president of the Community Health and Services Committee of the Quebec Medical Association and a member of the CMA Council on Health Care and Promotion. The opinions in this article are those of the author and do not necessarily represent those of any organization.*

Reprint requests to: Dr. John W. Osterman, Director, Community Health Department, Lakeshore General Hospital, 310-175 Stillview St., Pointe Claire, PQ H9R 4S3

inal scientific research articles, reviews, case reports and editorials as well as news and features articles concerning health issues. Many of the news and features articles are devoted to or inspired by CMA activities, position statements and news, or the impact of political and economic events on the association and its members. Because it officially bears the association's name, *CMAJ* is widely perceived as the "voice" of the CMA. This voice, however, is expressed almost exclusively in English. I believe that this is a major impediment to achieving the association's objectives in French Canada.

## English in *CMAJ*

The CMA publishes several scientific journals aimed at Canadian health care professionals; however, most of these appear mainly in English, thereby excluding francophone physicians not fluent in English from these authoritative sources of information and analysis. Although *CMAJ* purports to serve members in both official languages, a review of the contents of volume 146 shows that this is not the case.

In the fall of 1992, I surveyed this volume, including the Editor's Pages, other editorials, scientific articles, guidelines and position papers, *Encore* (reprinted *CMAJ*) articles, book reviews, newsbriefs, and news and features articles. I excluded letters to the editor, instructions for authors, obituaries, conference notices and advertisements. I classified each article into five categories according to language of publication: English only, English with a French abstract or summary, English and French (bilingual), French with an English abstract and French only. I used the Mantel-Haenszel  $\chi^2$  test to evaluate statistical significance for simple proportions and the  $\chi^2$  test for linear trend to evaluate ordinal data.<sup>3</sup> Results are shown in Table 1.

Volume 146 of *CMAJ* comprised 2280 pages and 388 articles. Of these, 81% were in English only, 11% in

English with a French abstract, 8% bilingual, none in French with an English abstract and 0.5% in French only. English-only articles appeared significantly more often than all other language classifications combined ( $p < 0.0001$ ).

The Editor's Page was the only consistently bilingual section. Of 13 other editorials 10 (77%) appeared in English only; the remaining 3, on smoking, quality in medical schools and homeopathy, were bilingual. It was unclear why these three editorials were treated differently from the others. No editorials were published in French only.

The scientific section consisted of 74 articles: 73 were in English, with or without a French abstract or summary, 1 was bilingual and none in French only. The one bilingual article was a worldwide update on AIDS based on bilingual material previously reported in *Canada Communicable Disease Report (CCDR)*, published by the Laboratory Centre for Disease Control.<sup>4</sup> Only 53% of the English articles had a French abstract; these were mainly unsolicited, peer-reviewed original research articles, clinical and community studies and current reviews. No abstracts appeared with the four peer-reviewed case reports. Thirty (41%) of the scientific articles were not peer reviewed through the *CMAJ* process, including 6 Atherosclerosis Update articles, 3 Horizons in Nutrition articles, 1 workshop report, the Barer-Stoddart Report (published in five parts), 5 articles from the Health Services Research Group, 4 reports previously published in *Canada Diseases Weekly Report (CDWR, later CCDR)* and a special supplement of 6 articles from the Canadian Heart Health Surveys Research Group. Only one of these articles had a French abstract; six structured abstracts appeared in English only. French abstracts appeared significantly more often with original, unsolicited, peer-reviewed material than with unsolicited material from other sources ( $p < 0.0001$ ).

Bilingual treatment was afforded most guidelines ar-

Table 1: Articles in volume 146 of *CMAJ* (January to June 1992) by language of publication

Article	Language; no. of articles					Total
	English only	English, with French abstract	Bilingual	French, with English abstract	French only	
Editor's Page	0	0	12	0	0	12
Editorial	10	0	3	0	0	13
Scientific article	34	39	1	0	0	74
Guidelines and position statements	3	0	12	0	1	16
Encore	13	2	0	0	0	15
Book review	47	0	0	0	1	48
Newsbrief	68	0	0	0	0	68
News and features article	140	0	2	0	0	142
Total	315	41	30	0	2	388

ticles and position statements, including four CMA policy statements, four guidelines articles based on material previously reported in *CDWR* or *CCDR*, two position statements from the Canadian Paediatric Society and position statements from the Federation of Medical Licensing Authorities of Canada and the International Committee of Medical Journal Editors. Two position papers from the Canadian Paediatric Society and one from the Canadian Thoracic Society were published in English only, and one guidelines article based on material previously published bilingually in *CDWR* was published in French 3 months after the English version had appeared in the previous volume. It was unclear why position statements from the same society appeared sometimes bilingually and sometimes in English only. It was also unclear why previously published bilingual material from *CDWR* or *CCDR* was only sometimes published bilingually.

Book reviews, Encore articles, newsbriefs, and news and features articles were published almost entirely in English only. For news and features articles in English only, this included all 18 articles on CMA news, 19 (95%) of 20 on health care, 5 (83%) of 6 articles on medical education and all articles on 31 additional topics of interest to both anglophone and francophone CMA members, including politics, ethics, law, computers, AIDS and the goods and services tax. Only two news and features articles were bilingual: one on the impact of possible Quebec separation on research<sup>5</sup> and the other on Ontario's chronic shortage of francophone physicians.<sup>6</sup> No newsbriefs or feature articles were published in French only.

For volume 146 as a whole, publication in English only was associated with articles written or solicited by *CMAJ* staff ( $p < 0.0001$ ). Clearly, there was little to offer francophone readers.

## Periodicals of other Canadian health care organizations

I compared volume 146 with five similar, general-interest health periodicals published during the same period, each the flagship publication of another Canadian organization of health care professionals with anglophone and francophone members. These included volume 25, issues 1, 2 and 4 of the *Annals of the Royal College of Physicians and Surgeons of Canada* (*Annals RCPSC*); volume 38, issues 1 to 6 of *Canadian Family Physician* (*CFP*); volume 83, issues 1 to 3 of the *Canadian Journal of Public Health* (*CJPH*); volume 88, issues 1 to 6 of *Canadian Nurse* (*CN*); and volume 58, issues 1 to 6 of the *Journal of the Canadian Dental Association* (*JCDA*). Results are presented in Table 2. *CMAJ* had significantly greater English content and less French content than the other periodicals ( $p < 0.001$  to  $0.0001$ ). A significantly greater proportion of English articles had French abstracts in the five other periodicals than in *CMAJ* ( $p < 0.0001$ ). The proportion of French articles, with or without abstracts, was significantly greater in four of the five other periodicals than in *CMAJ* ( $p < 0.0005$ ).

A comparison of the covers of the periodicals was particularly revealing. All five of the other publications boldly declared their names in French and English, and two (*Annals RCPSC*, *JCDA*) ensured that every word on the cover was translated. In contrast, *CMAJ* declared its English acronym in the biggest and boldest of type, but its French moniker, *JAMC*, was nowhere to be found. Article highlights on the *CMAJ* cover were almost exclusively in English. The date and the full name of the journal appeared bilingually but in the smallest type.

To differing degrees each of the five other periodi-

Table 2: Language of publication for articles in six Canadian professional health care periodicals, January to June 1992

Periodical	Language; no. (and %) of articles					Total
	English only	English, with French abstract	Bilingual	French, with English abstract	French only	
<i>Annals of the Royal College of Physicians and Surgeons of Canada</i>	33 (51)	28 (43)	3 (5)	1 (2)	0 (0)	65*
<i>Canadian Family Physician</i>	103 (50)	79 (39)	12 (6)	7 (3)	3 (1)	204†
<i>Canadian Journal of Public Health</i>	22 (32)	32 (47)	6 (9)	6 (9)	2 (3)	68†
<i>CMAJ</i>	315 (81)	41 (11)	30 (8)	0	2 (1)	388
<i>Canadian Nurse</i>	0	85 (62)	12 (9)	40 (29)	0	137†
<i>Journal of the Canadian Dental Association</i>	39 (37)	23 (22)	35(33)	1 (1)	7 (7)	105†

\* $0.0001 < p < 0.001$ ,  $\chi^2$  for linear trend, comparing journal to *CMAJ* by language of publication.

† $p < 0.0001$ .

cals had taken steps to include French content. For example, *CN* and *JCDA* had anglophone and francophone editorial staff and *CJPH* had a francophone assistant scientific editor. *CN* dedicated approximately one third of its pages to French articles (Judith A. Banning, editor-in-chief: personal communication, 1992); all articles, French or English, were published with short summaries in the other language, general interest articles appeared in either language, and editorials and association news were published in both. *JCDA* published separate French and English editions; the same scientific material was published in both issues in the author's language of choice with summaries in the other language. Editorials and news articles were translated and published separately in the appropriate French or English editions. Most advertisements appeared in the appropriate language for each edition; advertisers were charged a 20% premium on single-language rates to cover the additional costs (P. Ralph Crawford, MD, editor-in-chief: personal communication, 1992). *Annals RCPSC* and *CJPH* published editorial material and association news bilingually and scientific articles in the author's language of choice with abstracts in both languages.

## French and *CMAJ*

In 1989, 2 years before producing its strategic plan, the CMA updated its official languages policy, in which it renewed its "commitment to provid[ing] services to members in both official languages."<sup>7</sup> The CMA noted that "this commitment must be reflected in a sensible, sensitive program that allows the maximum service to members in both official languages at a cost in time and dollars that the organization can support." It stated that scientific and technical periodicals, including *CMAJ*, should publish certain information in both languages and as examples suggested masthead information, abstracts of scientific articles and the Publisher's Page (now Editor's Page). It stated, however, that it was "not practical, or even desirable, to translate technical articles. Articles should be published in the language of choice of the authors." This policy also stated that general information publications and information periodicals should be published simultaneously in both official languages, either in a bilingual edition or in separate editions.

Since 1989 French-language services at CMA have improved substantially. Nevertheless, the new CMA language policy had little effect on *CMAJ* in 1992. Until very recently, the editors resolutely followed the narrowest interpretation of their French-language obligations. In volume 146 the masthead information, the Editor's Pages and most abstracts were bilingual, but there was very little French elsewhere.

There is, of course, nothing in CMA language policy that prevents *CMAJ* staff from writing or soliciting material in French; it just does not seem to occur. *CMAJ* staff are directly responsible for writing, soliciting or se-

lecting much of the material they publish, including most news and features articles, newsbriefs, book reviews, editorials, Encore articles and many epidemiologic reports. Nevertheless, *CMAJ* has anglophone, bilingual but no francophone staff. Contributing editors, scientific consultants and freelance writers hired by *CMAJ* are generally anglophone. Francophone freelance writers rarely contribute in French. Very recently *CMAJ* began publishing short French summaries of English articles that do not require bilingual structured abstracts. Unfortunately, these summaries provide little of the article's content and may be a source of further frustration for francophone readers not fluent in English by identifying interesting articles, the contents of which they cannot decipher.

One reason given by *CMAJ* editors for the lack of French material is that they receive few unsolicited French manuscripts.<sup>1</sup> Although it may be true that many francophone authors contribute scientific articles in English, reflecting the current worldwide dominance of English in scientific communications, unsolicited original research represents only a small portion of what *CMAJ* publishes. Moreover, four of the other five periodicals had significantly more original French material than *CMAJ*. Certain periodicals actively encourage submissions of French material and publish papers from other francophone countries. *CMAJ* publishes features from London, England.

The information for authors in *CMAJ* may also discourage unilingual francophone authors from submitting material in French. Although such information is provided in English and French in the first issue of each volume of *CMAJ*, authors are repeatedly encouraged to consult key articles written by *CMAJ* editorial staff but published only in English.<sup>8-17</sup> In volume 146, for example, clear, concise information was published about the acceptable preparation of and appropriate subject material for *CMAJ* manuscripts, but only in English.<sup>18</sup> (This practice changed in volume 149, in which such information was published in both languages.<sup>19</sup>)

Another factor to consider is the possible constraints on time, money and organization needed to produce a widely read medical journal. Increasing French content might place an unacceptable burden on already limited resources. This would not seem to be a reasonable explanation for the lack of French content in *CMAJ*, however. Francophone staff and freelancers writing in French are no more expensive than their anglophone colleagues writing in English. Moreover, in 1992 *CMAJ* generated a net revenue of more than \$1.3 million,<sup>20</sup> and its editors found resources to publish articles on the therapeutic value of cats, keeping a personal journal, ice climbing and a lengthy April Fool's joke on new drugs for werewolves. Other Canadian health care organizations can accommodate significantly more French in their flagship publications despite greater financial limitations.

*CMAJ* editors also state that the amount of French content in *CMAJ* depends on the composition of the readership,<sup>1</sup> which is first and foremost CMA members. The editors conducted an informal survey of francophone members, in French, which showed that few requested more French articles. I believe these results are misleading. CMA membership among francophone physicians is appallingly low in Quebec, where more than 10 000 mainly young francophone physicians are not members; membership of francophone physicians in Ontario is also disproportionately low (Carole Deburgraeve, CMA Membership Services: personal communication, 1993). The result is a vicious circle; although *CMAJ* editors suggest that the amount of French material be justified by the readership, francophone physicians are unlikely to begin reading a mostly English periodical they do not understand.

### Some solutions

The CMA is far from achieving its goals and objectives in French Canada. Francophone physicians tend not to be members of the association; moreover, a recent survey of Quebec medical specialty associations and local general practitioner organizations showed that the CMA's role is misunderstood and not appreciated.<sup>21</sup> Most of the presidents of these organizations suggested that the CMA serves no useful purpose in Quebec.<sup>21</sup> Worse, CMA has little recognition among nonphysicians in the province. For example, when the Quebec media seek the opinion of organized medicine on practically anything they usually turn to the provincial medical licensing and disciplinary body, la Corporation professionnelle des médecins du Québec.<sup>22</sup> Obviously *CMAJ* is not the cause of this sorry state of affairs. I believe, however, that it should be part of the solution.

In its 1991 strategic plan the CMA recognized the need to increase the number and effectiveness of its communication activities and products. Given the vital role of *CMAJ* as the association's flagship publication and English Canada's leading general medical journal, I believe the most obvious place to begin is by publishing *CMAJ* in French.

A French edition would serve several purposes. By providing in French the scientific, educational and informational services now provided in English, it would enhance the image and awareness of CMA among francophone readers. This is an essential step toward improving recruitment of francophone physicians. A French edition would also become an important mechanism for informing and educating francophone physicians, media and the public about the impact of national health policy and political events on Quebec's health care delivery system. Such a mechanism would help dispel the myth prevalent in Quebec (and elsewhere) that the health care system is mainly a provincial matter and can be addressed adequately through provincial profes-

sional organizations. No French-language medical or other periodical now fulfils this role, and thus the CMA has a golden opportunity through its flagship publication to establish its legitimacy in Quebec as the voice of the medical profession. Finally, a French edition would help break down the communication barriers between Canadian physicians who do not speak the same language, a necessary step in achieving the journal's goal of becoming the communication vehicle among all Canadian physicians.

It is time for the CMA to study seriously the marketability of such an edition and the effect on revenue of French-language advertising and recruitment of francophone physicians. With some 17 000 physicians in Quebec, and francophone physicians elsewhere, there is no reason why a French *CMAJ* should not be a useful and profitable addition to the stable of CMA publications. In the meantime the CMA should direct the journal to hire francophone editorial staff, freelancers, and news and features writers. *CMAJ* should start publishing fully bilingual covers, editorials, CMA news items and features of national importance or of particular interest to francophone readers. Guidelines and other key health care documents should be fully translated, by contributors when possible. *CMAJ* editors should also begin soliciting and producing material in French. They should also encourage French-language scientific submissions. Such encouragement could be aided by publishing the excellent series of articles on the requirements for scientific manuscripts<sup>8-17</sup> in French. Given CMA's strategic plan a French edition of *CMAJ* should be a priority.

### References

1. Huston P: Le français dans le *JAMC*; French in *CMAJ*. *Can Med Assoc J* 1993; 149: 385
2. *Strategic Plan. The Mission, Roles, Goals and Objectives of the Canadian Medical Association; Cap sur l'avenir. La mission, les rôles et les buts de l'Association des médecins du Canada*, Canadian Medical Association, Ottawa, 1991
3. Kramer MS: *Clinical Epidemiology and Biostatistics*, Springer-Verlag, New York, 1988
4. Update on AIDS worldwide; Mise à jour sur le SIDA — mondial. *Can Med Assoc J* 1992; 146: 2187-2189, 2191-2193
5. Morgan PP: Separation by Quebec would strike devastating blow to Canadian research, panellists say; La séparation du Québec pourrait faire des ravages dans la recherche au Canada, disent les experts. *Ibid*: 1221-1222, 2237-2240
6. Martin M: Ontario seeks solution to chronic shortages of francophone MDs; L'Ontario cherche une solution aux pénuries chroniques de médecins francophones. *Ibid*: 254-258, 258-260
7. *Official Languages Policy for the Canadian Medical Association; Politique sur les langues officielles de l'Association des médecins du Canada*, Canadian Medical Association, Ottawa, 1989
8. Squires BP: Illustrative material: What editors and readers expect from authors. *Can Med Assoc J* 1990; 142: 447-449
9. Idem: Biomedical manuscripts: What editors want from authors and peer reviewers. *Can Med Assoc J* 1989; 141: 17-19
10. Squires BP, Elmslie TJ: Reports of case series: What editors expect from authors and peer reviewers. *Can Med Assoc J* 1990; 142: 1205-1206
11. Idem: Reports of case-control studies: What editors want from

- authors and peer reviewers. *Can Med Assoc J* 1990; 143: 17-18
12. Idem: Cohort studies: What editors want from authors and peer reviewers. *Ibid*: 179-180
  13. Idem: Reports of randomized controlled trials: What editors want from authors and peer reviewers. *Ibid*: 381-382
  14. Squires BP: Biomedical review articles: What editors want from authors and peer reviewers. *Can Med Assoc J* 1989; 141: 195-197
  15. Idem: Case reports: What editors want from authors and peer reviewers. *Ibid*: 379-380
  16. Idem: Descriptive studies: What editors want from authors and peer reviewers. *Ibid*: 879-880
  17. Idem: Editorials and platform articles: What editors want from authors and peer reviewers. *Ibid*: 666-667

18. Idem: Does your manuscript fit in? *Can Med Assoc J* 1992; 146: 463-464
19. Idem: Preparing manuscripts for publication: general pointers; Préparation des manuscrits à la publication : indications générales. *Can Med Assoc J* 1993; 149: 25-26, 27-28
20. *Reports to the General Council, 126th Meeting of the General Council of the Canadian Medical Association, Calgary, Alta., Aug. 22-25, 1993*, Canadian Medical Association, Ottawa, 1993: 32
21. Boileau M: Que pensez-vous de l'échec du comité tripartite sur le regroupement de la profession? *Actualité médicale* 1993; 14 (22): 6
22. C'est le retour à la case départ : Si chacun joue son rôle, il n'y aura pas de conflit. *Actualité médicale* 1993; 14 (18): 4

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**June 5-7, 1994:** Canadian Hospital Association and Canadian College of Health Service Executives Joint Annual Conference — Renovations in Progress: Redesigning Canada's Health System (in collaboration with the Canadian Health Care Public Relations Association)

Halifax

Canadian Hospital Association, Conferences, 100-17 York St., Ottawa, ON K1N 9J6; tel (613) 238-8005, fax (613) 238-6924; or Canadian College of Health Services Executives, Conferences, 402-350 Sparks St., Ottawa, ON K1R 7S8; tel (800) 363-9056 or (613) 235-7218, fax (613) 235-5451

**Du 5 au 7 juin 1994 :** Conférence annuelle conjointe de l'Association des hôpitaux du Canada et le Collège canadien des directeurs de services de santé — Rénovations en cours : remise à neuf du système canadien de santé (en collaboration avec l'Association canadienne des relations publiques, secteur santé)

Halifax

Association des hôpitaux du Canada, Conférences, 100-17, rue York, Ottawa, ON K1N 9J6; tél (613) 238-8005, fax (613) 238-6924; ou Collège canadien des directeurs de services de santé, Conférences, 402-350, rue Sparks, Ottawa, ON K1R 7S8; tél (800) 363-9056 ou (613) 235-7218, fax (613) 235-5451

**June 5-10, 1994:** 14th World Congress of Social Psychiatry — Farewell to Babylon: Towards an Understanding on the Limits of Psychiatry (linked to the 30th anniversary of the World Association of Social Psychiatry)

Hamburg, Germany

*Official languages: German and English*

Kongresssekretariat "Weltkongress für Soziale Psychiatrie," Universitäts-Krankenhaus Eppendorf, Martinistr. 52, 2000 Hamburg 20; tel 011-49-40-4717-5464, fax 011-49-40-4717-5455

**June 12-15, 1994:** Critical Care Symposium  
Banff, Alta.

*Study credits available.*

Continuing Medical Education, Faculty of Medicine,

University of Alberta, 2J3 Walter Mackenzie Centre, Edmonton, AB T6G 2B7; tel (403) 492-6346, fax (403) 492-5487

**June 16-18, 1994:** International Conference on Biomedical Periodicals (organized by the Chinese Medical Association) Beijing, China

Dr. Yongmao Jiang, assistant director, Publishing House of Medical Journals, Chinese Medical Association, 42 Dongsi Xidajie, Beijing 100710, China; tel 011-86-1-5133311, ext. 362; fax 011-86-1-5123754

**June 17-23, 1994:** 1st World Congress on Biomedical Communications — Global Images in Health and Science Orlando, Fla.

Professional Conferences Inc., PO Box 50340, Irvine, CA 92619-0340; tel (714) 753-8680, fax (714) 753-8685

**June 18-22, 1994:** Joint Meeting of the International Strabismological Association and the American Association for Pediatric Ophthalmology and Strabismus (satellite meeting of the 27th International Congress of Ophthalmology)

Vancouver

Ms. Tricia Stevens-Petras, 105 Twin Ridge Lane, Richmond, VA 23235; tel (804) 320-2833, fax (804) 272-1320

**June 19-22, 1994:** 1st International Symposium on Ecosystem Health and Medicine — New Goals for Environmental Management

Ottawa

Mr. Remo Petrongolo, symposium manager, Office of Continuing Education, 159 Johnston Hall, University of Guelph, Guelph, ON N1G 2W1; tel (519) 824-4120, fax (519) 767-0758

**June 19-22, 1994:** Interleukin-6-type Cytokines Poznan, Poland

Geraldine Busacco, conference director, New York Academy of Sciences, 2 E 63rd St., New York, NY 10021; tel (212) 838-0230, fax (212) 838-5640

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